1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--TWO PYRIDYLAZONAPHTHOL ISOMERS AND THEIR REACTION WITH COPPER IONS -U-

AUTHOR--GUSEV, S.I., GLUSHKOVA, I.N., KETOVA, L.A., PESIS, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 260-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRIDINE, AZO COMPOUND, NAPHTHOL, COPPER COMPLEX, EQUILIBRIUM CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1687 STEP NO--UR/0075/70/025/002/0260/0266

CIRC ACCESSION NO--AP0104902

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0104902
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 2,(2,PYRIDYLAZO),1,NAPHTHOL (I) AND 4,(2,PYRIDYLAZO),1,NAPHTHOL (II) WAS OBTAINED. NA 2,PYRIDYLAZOTATE (17 G) IN 75 ML ETOH WITH 17.3 G NAPHTHOL WAS TREATED WITH CO SUB2 UNTIL A THICK PASTE IS FORMED TO GIVE I AND II BY FRACTIONAL CRYSTN. I HAS LAMBDA 360, 470 MMU; II HAS LAMBDA 450 MMU. PK SUBNH AND PK SUBOH OF I AND II WERE 1.05 PLUS OR MINUS 0.13 AND 11.11 PLUS OR MINUS 0.16 AND 1.57 PLUS OR MINUS 0.16 AND 10.45 PLUS OR MINUS 0.49, RESP. I FORMS WITH CU 1:1 AND 1:2 COMPLEXES, DEPENDING ON THE PH AND THE REAGENT RATIO. WITH EXCESS REAGENT THE COMPLEXES HAVE LAMBDA 570 MMU AT PH 1-3 AND LAMBDA 560 MMU AT PH 5-6. WITH CU IONS EXCESS LAMBDA IS 570 MMU. THE 1:1 COMPLEX CAN BE EXTD. WITH BUOH, THE 1:2 COMPLEX WITH CCL SUB4. MOLAR ABSORPTIVITY OF THE COMPLEXES, THEIR INSTABILITY CONSTS., AND REACTION EQUIL. CONSTS. FOR THE CU-I (PH 1-3) COMPLEX, THE CU-I (PH 5-6) AND THE CU-II COMPLEX WERE AS FOLLOWS: (2.447 TIMES 10 PRIME4, (2.87 PLUS OR MINUS 0.46) TIMES 10 PRIME NEGATIVE6, (1.18 PLUS OR MINUS 0.02) TIMES 10 PRIME NEGATIVE4; 4.745 TIMES 10 PRIME4, (7.61 PLUS OR MINUS 0.99) TIMES 10 PRIME NEGATIVE7, (6.45 PLUS OR MINUS 0.29) TIMES 10 PRIME NEGATIVE4; 3.95 TIMES 10 PRIME4, (2.70 PLUS OR MINUS 0.02) TIMES 10 PRIME NEGATIVE5, (6.79 PLUS OR MINUS 0.07) TIMES 10 PRIME NEGATIVE4.

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--BETA,DICARBONYL DERIVATIVES OF 4,HYDROXY,3,5,DI,TERT,BUTYLBENZALDEHYDE -U-

AUTHOR-(02)-GLUSHKOVA, L.V., YEGIDIS, F.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,387

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONYL COMPOUND, BENZALDEHYDE, HYDROXYL RADICAL, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0840 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136274

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AA0136274
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS. ARE PREPD. BY TREATING 4,HYDROXY,3,5, DI,TERT,BUTYLBENZALDEHYDE WITH BETA,DICARBONYL DERIVS. IN AN ORG. SOLVENT IN THE PRESENCE OF PIPERIDINE AND HOAC.

UNCLASSIFIED

USSR UDC 546.833.181.1'131

GLUSHKOVA, M. A., YERSHOVA, M. M., OVCHINNIKOVA, N. A., and BUSLAYEV, YU. A., Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSSR

"Study of Some Reactions Using Phosphine Derivatives of Niobium and Tantalum Pentachlorides"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 1, Jan 72, pp 147-149

Abstract: Synthesis of the $MCl_5 \cdot R_3P$ type compounds (M= Nb, Ta; R= Bu, Ph) was carried out in CCl_4, using a 1:1 ratio of starting components. Solutions of Ph_3P in CCl_4 or Bu_3P in benzene were added dropwise to a saturated solution of MCl_5 in CCl_4. Orange $NbCl_5$ and yellow $TaCl_5$ formed and precipitated during the addition. After 12 hours, solid was separated by decantation, washed with CCl_4 and dried yielding $MCl_5 \cdot R_3P$ -- powdery products, soluble in CCl_4 and C_6H_6. The tantalum products melted higher than the niobium derivatives. When heated above 300°C they decomposed. $MCl_5 \cdot R_3P$ reacted with ethanol yielding $MCl_3(OC_2H_5)_2Ph_3P$. When dry ammonia was passed through a benzene solution of 1/2

USSR

GLUCHKOVA, M. A., et al., Zhurnal Neorganicheskoy Khimii, Vol 17, No 1, Jan 72, pp 147-149

$MCl_3.R_3P$, the products formed were $NbCl_5.6NH_3.0.5C_6H_6$ and $TaCl_5.7NH_3.0.5C_6H_6$.

Study of the thermal behavior of $NbCl_5 \cdot Bu_3P$ in argon showed that roentgenoamorphous niobium phosphine chloride -- $NbPCl_2$ -- is formed at 475°C, exhibiting plastic properties.

2/2

GLUSHKOVA, M. A.

Primary mechanics

D1880

SO: JPRS 55466
17 Mar 72

IRREGULARITY OF LOADING OF SATELLITES IN PLANETARY MECHANISMS

[Article by E. L. Ayrapetov, M. D. Genkin, M. A. Glushkova; Moscow, Vibroakusticheskaya Aktivnost' Mekhanizmov s Zubchatymi Peredachami, Russian, 1971, pp 66-85]

One of the principal indices characterizing the quality of a planetary mechanism is the coefficient of satellite loading irregularity, equal to the ratio

$$K_{ir} = P_{max}/P_{av}, \quad (1)$$

where P_{max} is the maximum load on one of the satellites; P_{av} is the average (calculated) load on the satellites.

Satellite loading irregularity is determined by the errors of manufacture and mounting of gears and is not, in the general case, constant in time. Converting to deformations in gear meshing we write the formula for K_{ir} in the form

$$K_{ir} = \delta_{max}/\delta_{av} = 1 + (\Delta t_{ef}/\delta_{av}), \quad (2)$$

where δ_{max} is the maximum deformation in the gears of one of the satellites; δ_{av} is the average (calculated) deformation in the gears of a satellite with central gears; Δt_{ef} is the effective meshing error.

Primary errors can be divided in terms of their influence on meshing load into two basic groups. The effect of the first group of primary errors (radial wobble of gear rims, eccentric mounting of gears in bearings), does not remain constant in time, but depends on the mutual location of the parts of the planetary mechanism. The influence of the second group of primary errors (errors in the location of borings for the satellites in the sun wheel, gaps between the satellites and satellite axes, between satellite axes and sun wheel borings, errors in thickness of satellite

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NITROSYL DERIVATIVES OF NIOBIUM AND TANTALUM -U-

AUTHOR-(04)-BUSLAYEV, YU.A., GLUSHKOVA, M.A., YERSHOVA, M.M.,
OYCHINNIKOVA, N.A.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 474-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NIOBIUM, TANTALUM, IR SPECTRUM, CHLORIDE, NITROSYL CHLORIDE,
AMORPHOUS MATERIAL, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1520 STEP NO--UR/0062/70/000/002/0474/0475

CIRC ACCESSION NO--AP0120301

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120301

ABSTRACT/EXTRACT--(U) GP-0- METAL CHLORIDE IN C SUB6 H BROWN COMPLEXES: NBCL SUB5 .NO AND TACL SUB5 .NO.C SUB6 H SUB6. THESE PROVED TO BE AMORPHOUS IN X RAY ANAL. THE IR SPECTRA HAVE BANDS IN THE 1480 CM PRIME NEGATIVE1 AND 1990 CM PRIME NEGATIVE1 REGIONS, CAUSED BY NO BOND VIBRATIONS.

KURNAKOVA, MOSCOW, USSR.

ABSTRACT. PASSING DRY NO INTO A SOLN. OF SUB6 (PREPD. OVERNIGHT BY LEACHING) GAVE

FACILITY: INST. OBSHCH. NEORG. KHIM. IM.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--REACTION OF SILANOILS WITH SILICATES -U-

AUTHOR--KHARITONOV, N.P., GLUSHKOVA, N.E., ZHUKOVA, A.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 59-62

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, SILICATE, HYDROXYL RADICAL, ASBESTOS, TALC, CONDENSATION REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1660 STEP NO--UR/0363/70/006/001/0059/0062

CIRC ACCESSION NO--AP0104882
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104882

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF SILANOLS (ET SUB3 SIOH, PH SUB3 SIOH, PH SUB2 SIMEOH, PH SUB2 SI(OH)SUB2) WITH MUSCOVITE, CHRYSOTILE ASBESTOS, AND TALC IN BOILING XYLENE (150DEGREES) WAS STUDIED. IN THE MAJORITY OF CASES, CONDENSATION TAKES PLACE BETWEEN THE SURFACE HYDROXY GROUPS OF THE SILICATE AND THE HYDROXY GROUPS OF THE SILANOL.

UNCLASSIFIED

USSR UDC: 621.762:669.018.5(088.8)

DAVIDOVICH, Ya. G., GLUSKIN, A. Ya., TEMKIN, I. V., AVRORVA, G. V., PETROSYAN, L. S., KOZHEVNIKOV, V. I.

"Method of Manufacture of Metal-Graphite Brushes"

USSR Author's Certificate Number 353303, Filed 13/10/70, Published 24/10/72 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G434P).

Translation: A method is suggested for the manufacture of metal-graphite brushes, for example copper-graphite brushes, by mixing of graphite and pitch in the solid state with the addition of Cu powder and subsequent pressing of the mixture. In order to improve the characteristics of the brushes, the Cu powder is mixed with the prepared mixture of graphite and pitch.

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USSR UDC 621.762:669.018.24(088.8)

AL'TMAN, A. B., GLUSKIN, Ya. A., GRIB, V. V., ZALMANOV, Yu. S., MEMELOV, V. L.

"Metal Ceramic Antifriction Material"

USSR Author's Certificate No 316738, filed 2/04/70, published 14/12/71, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G497 P).

Translation: A material based on Co is suggested, containing a solid lubricant. In order to increase the mechanical and antifriction properties in the dry friction mode, Ag is introduced with the following ratio of components (in %): Ag 5-20, solid lubricant 5-15, Co -- remainder.

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1/2 044 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANISTROPY OF THE ANTIFRICTION CERMENT MATERIALS WITH A SOLID LUBRICANT -U-

AUTHOR-(05)-ABRAMOVA, L.S., ALTMAN, A.B., VAYNSHTEYN, V.E., GLUSKIN, YA.A., MEMELOV, V.L.

COUNTRY OF INFO--USSR

SOURCE--POROSHKOVAIA METALLURGIIA, VOL. 10, FEB. 1970, P 85-89

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SOLID LUBRICANT, ANISOTROPY, CERMET, COMPOSITE MATERIAL, SILVER, MOLYBDENUM DISULFIDE, ANTIFRICTION MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0589 STEP NO--UR/0226/70/010/000/0085/0089

CIRC ACCESSION NO--AP0107196

UNCLASSIFIED

2/2 044 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0107186
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE ANTIFRICTIONAL PROPERTIES OF A SYSTEM AG-MOS2 WITH A DIFFERENT CRYSTALLOGRAPHIC ORIENTATION OF THE MOS2 WITH RESPECT TO THE FRICTION SURFACE. IT IS FOUND THAT THIS COMPOSITE MATERIAL EXHIBITS AN ANISOTROPY OF ITS MECHANICAL AND ANTIFRICTIONAL PROPERTIES. IT IS SUGGESTED THAT IN THE FABRICATION OF ANTIFRICTION PARTS MADE OF THIS COMPOSITE, AN ATTENTION MUST BE GIVEN TO THE SELECTION OF THE MOST SUITABLE ORIENTATION OF THE SOLID LUBRICANT.

UNCLASSIFIED

USSR

VORONOVITSKIY, M. M., GLUZBERG, G. YE. and LEVIN, V. L.

"Infinite-Dimensional Analogues of the Problem of Linear Programming and a Theorem on a Saddle Point"

Teoriya Igr [Games Theory -- Collection of Works], Yerevan, 1973, p 116 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V494)

Trnaslation: Suppose X and Y are real, distinguishable, locally convex spaces, K_x and K_y are closed convex cones in them and A is a continuous linear mapping. The following problem is studied: minimize

$$f(x) \tag{1}$$

under the conditions

$$Ax \geq y_0, \; x \geq 0, \tag{2}$$

where f X, y_0 Y.

Theorem. Suppose: 1) any non-negative linear functional in Y is continuous, 2) for any y Y we can find vector $x \geq 0$ and number λ such that $y \leq Ax + \lambda y_0$. Then, the saddle point theorem is correct for problems (1) and (2). From the article

1/2 CC7 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PREPARATION OF PURE BETA AND GAMMA PICOLINES BY THE AZEOTROPIC FRACTIONAL DISTILLATION OF A BETA PICOLINE FRACTION -U-
AUTHOR-(04)-PRIVALOV, V.YE., GLUZMAN, L.D., YEFIMENKO, V.M., SLACHINSKIY, YU.A.
COUNTRY OF INFO--USSR

G

SOURCE--KOKS KHIM. 1970, (5), 38-42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AZEOTROPE, ISOMER, DISTILLATION, PYRIDINE, HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1734 STEP NO--UR/0068/70/000/005/0038/0042

CIRC ACCESSION NO--AP0125355

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125355

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AZEOTROPIC DISTN. OF A BETA PICOLINE FRACTION FORMING AN AZEOTROPE (60PERCENT H SUB2 O) B. 96.3DEGREES YIELDED 99PERCENT PURE BETA AND GAMMA ISOMERS WHEN THE COLUMN HAD GREATER THAN 70 THEORETICAL PLATES AND THE REFLUX RATION WAS 30. THE METHOD ALSO YIELDED 99PERCENT PURE ISOMERS WHEN APPLIED TO ALPHA AND GAMMA PICOLINE AND 2,6 LUTIDINE FRACTIONS, FORMING AZEOTROPES (46.5, 62.5, AND 51.0PERCENT H SUB2 O, RESP.) B. 94.4DEGREES, 96.7DEGREES, AND 95.5DEGREES.

UNCLASSIFIED

Acc. Nr: AP0036754 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: UR 0068

G

78824c Separation of 2,4-lutidine by an azeotropic rectification method. Gluzman, L. D.; Slachinskii, Yu. A.; Kostochka, V. P. (USSR). *Koks Khim.* 1970, (1), 42-3 (Russ). 2,4-Lutidine (I) of 99% purity was sepd. in 79.6% yield by azeotropic distn. of 617.5 g crude I (45.02% I, 26.15% 2,5-lutidine, 3.43% 2,3-lutidine, and α-, β-, and γ-picoline, 2,6-lutidine, and C_5H_5N in lesser amts.) with H_2O to make 3 l. and dehydration of the distillate by azeotropic distn. with C_6H_6. The remaining azeotropes had close b.ps. which rendered sepn. impossible.

Lucile S. Davison

1/1

ALS

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REEL/FRAME
19721667

USSR

UDC 532.6:547.42

GLUZMAN, M. Kh., DASHEVSKAYA, B. I., and ZASLAVSKAYA, R. G., Khar'kov Scientific-Research and Chemical-Pharmaceutical Institute

"A Synthesis and Study of the Surfactant Properties of Monoethylpolyethyleneglycol Esters of Aliphatic Acids"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLIV, No 1, Jan 71, pp 167-171

Abstract: The ethoxylated derivatives of certain classes of organic compounds are very valuable in that the length of the hydrophilic portion of the molecule can be varied to produce desired properties, the substances are nontoxic, noncorrosive and chemically inert, and the raw material is inexpensive. The present study was made to develop a method of synthesis for an homologous series of fatty acid esters, and to determine their properties.

Various fatty acids (valeric, caproic, enanthic, capric, lauric, palmitic, stearic and oleic) were esterified with monoethylpolyethyleneglycols, various degrees of polymerization (10, 20, 30 and 40) of the samples being studied to assure a basis for comparison of properties. It was found that the surface-active properties of these monoethyleneglycol esters, in the case of those whose hydrophobic portion contains 12, 16 and 18 carbon atoms,

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GLUZMAN, M. Kh., et al., Zhurnal Prikladnoy Khimii, Vol XLIV, No 1, Jan 71, pp 167-171

are not subject to the Traube rule, since they are crosslinked with water to form reticular aggregates. Data obtained on the hydrophilic-lipophilic balance indicate that most of these compounds might be used as emulsifiers and as solubilizers.

Epidemiology

USSR

UDC 616.932-022.9

AVROROV, V. P., SAYAMOV, R. M., ILYUKHIN, V. I., GLYAN'KO, Ye. V., and BARDYKH, I. D., Rostov-on-Don Cholera Institute Laboratory of Pathological Physiology and Laboratory of Emergency Prophylaxis and Treatment of Cholera

"Factors That Promote the Development of Experimental Cholera in Puppies"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 6, 1972, pp 18-20

Abstract: Two- to 3-month-old puppies were inoculated with various strains of El Tor vibrio under different conditions to determine the suitability of these animals as an adequate model of cholera for pathophysiological and immunological studies. Infection was generally induced only when the animals received bacterial suspensions freshly isolated from cholera patients. The administration of actinomycin D, which lowers resistance to intoxication and infection, increased the probability of infection with the typical clinical symptoms and isolation of the causative agent from the stools and intestinal contents. The rate of infection was also increased by blocking gastric secretion either with alcohol or 3 days' fasting.

1/1

GLYAZER, L. S.

Econ.

INCREASED ECONOMIC APPLICATIONS OF SCIENCE DISCUSSED

[Article by L. S. Glyazer, candidate of economic sciences: "The New Situation in Science," Novosibirsk, Ekonomika i Organizatsiya Promyshlennogo Proizvodstva, Russian, No 4, 1971, pp 16-17]

What is science? A dozen different definitions could be cited as a reply to this question.

K. Marx: "Science...is the universal spiritual product of social development. Science is the product of overall historical development in its abstract result."

I. Kant: "Science is a system; i.e., the aggregate of knowledge which is put into order on the basis of definite principles."

L.N. Tolstoy: "Science as it has always been understood and is now understood by the majority of people is a knowledge of the subjects of knowledge which are most necessary and most important for human life."

G.V. Plekhanov: "Science is the explanation of the life of society in general concepts."

A. Einstein: "Science is an attempt to bring the chaotic diversity of our sensory experience into correspondence with some uniform system of thought."

J. Ortega y Gasset: "Science is an interpretation of facts. In and of themselves they do not provide an idea of reality."

V. Ramsey: "Science is the name given to thinking which has the goal of predicting and controlling the course of events, and also, insofar as is possible, of using acquired knowledge for the benefit of mankind."

B. Russell: "Science, as is clear from the name itself, is above all knowledge; it seeks the general laws which connect a large number of

JPRS 55237 18 February 1972, Translations on USSR Economic Affairs, No. 139

USSR UDC: 681.325.65-525

CHAPLYGIN, E. I., TROSHKIN, A. K., SHMELEV, L. F., BORODIN, Yu. F., SYCHEV, Ye. A., GLYZIN, A. N., CHERNYSHEVA, M. A., KASPAROV, G. Ye., Volga Affiliate of the All-Union Scientific Research Institute of Abrasives and Grinding

"An OR-NOR Fluidic Element"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285341, class 42, filed 14 Jul 69, published 29 Oct 70, pp 118-119

Translation: This Author's Certificate introduces an OR-NOR fluidic element which contains supply, control, and output channels; a jet interaction chamber; and also channels which are open to the atmosphere. As a distinguishing feature of the patent, the device is designed for improved stability of the characteristics of the element. The unit contains an added projection on the wall opposite the control channels preceding the corresponding channel which is open to the atmosphere, and also an additional chamber made in this channel which is open to the atmosphere and located immediately behind the projection.

1/1

USSR UDC: 621.391.8:519.27

SITNIKOV, O. P., GLYZIN, V. I.

"Instrumental Analysis of Random Processes Based on Fourier-Walsh Expansions"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T 3 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 64-66 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A55)

Translation: The authors point out the disadvantages of the method of correlation analysis of random processes using multiplication correlators. Consideration is given to an analyzer of characteristics of a stationary ergodic random process based on expansion of this process in an orthogonal basis of Walsh functions. The operating system of the analyzer consists of a Walsh function generator, a sign multiplication element, an integrator with zero-order extrapolator, a dispersion measuring device, and a control circuit. A passive low-frequency filter may be substituted for the integrator with extrapolator. Two illustrations, bibliography of three titles. N. S.

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GMIRO, V. Ye. JPRS 58042 23 Jan 73

(3)

JPRS 58042

23 January 1973

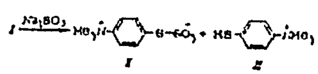
UDC 615.216.5+615.217.4

CONTROLLED MYORELAXANTS AND GANGLIOBLOCKERS WITH A DISULFIDE BOND

[Article by N.V. Khromov-Borisov, V. Ye. Gmiro and L.G. Magazanik, Institute of Experimental Medicine AMN USSR, Institute of Evolutionary Physiology and Biochemistry imeni I.M. Sechenov, AS USSR, Leningrad: Moscow, Khimiko-farmatsevticheskiy Zhurnal, Russian, No 11, 1972, submitted 16 July 1971, pp 21-24]

Until recently, there was not developed effective methods of control of the effect of biologically active substances which would not be based, in the final analysis, upon the use of natural protective forces of the organism (biochemical transformation of the substances which lead to its inactivation and excretion). Methods of active chemical effect on the fate of medicines in the organism may be more effective and operational. We assumed an experimental model of such effect, based upon the following principle: a medicine with a weak link in the molecule is used as well as an agent capable of destroying this link /1-3/. We used a disulfide bond as the weak link and some nucleophilic compounds, sodium sulfite, for example, which destroy it, as agents.

The first model compound-I (see Table), synthesized by us for checking this hypothesis belongs to the pharmacological class of myorelaxants. It contains an aromatic disulfide bond, weakened by the electron acceptor effect of quaternary ammonia groups. In an aqueous solution, at room temperature I is easily destroyed by the effect of sodium sulfite, forming a Bunt salt in the form of a zwitter-ion (II) and an arylthiol (III) /2/.



[I - USSR - C]

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200920014-1"

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--REGULATION OF THE DURATION OF AUTONOMIC GANGLION BLOCKADE -U-

AUTHOR-(03)-KHRCMCVBORISOV, N.V., GMIRO, V.YE., MAGAZANIK, L.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 729-31

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GANGLIONIC BLOCKING AGENT, CAT, BLOOD PRESSURE, CURARE, SODIUM SULFATE, DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1660 STEP NO--UR/0020/70/191/003/0729/0731

CIRC ACCESSION NO--AT0133565

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AT0133565
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INJECTION OF DITHIAHEXONIUM (ME SUB3 INCH SUB2 CH SUB2 S) SUB2 AT 1-2 MICRO-MOLE-G INTO CATS CAUSED A DROP IN ARTERIAL PRESSURE AND DECLINE OF THE TONE OF THE NICTITATING MEMBRANE, INDICATING PARTIAL BLOCK OF THE NERVE CONDUCTION VIA THE SYMPATHETIC GANGLIA. SIMULTANEOUS INTAKE OF NA SUB2 SO SUB3 RAPIDLY INHIBITED THE GANGLION BLOCKING EFFECT OF THIS DRUG BUT THIS WAS NOT THE CASE WITH (ME SUB3 INCH SUB2 CH SUB2 CH SUB2) SUB2. THE ACTION OF NA SUB2 SO SUB3 APPEARS TO BE THE CLEAVAGE OF THE SS LINK AND FORMATION OF IONIC FRAGMENTS OF THE 2 PORTIONS. THE DRUG HAD A STRONG CURARE-LIKE ACTION BUT WAS 0.1 AS ACTIVE IN THIS RESPECT AS (ME SUB3 IN(CH SUB2) SUB5) SUB2 OR (ME SUB3 INCH SUB2 CH SUB2 CH SUB2 CH SUB2 S) SUB2. THE ACTION OF THE LATTER IS BUT LITTLE AFFECTED BY NA SUB2 SO SUB3, EVIDENTLY DUE TO WEAKENED AID TO NUCLEOPHILIC ATTACK AT THE SS GROUP BY THE MORE REMOTE QUATERNARY N CHARGE. FACILITY: INST. EKSP. MED., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 519.2

GMURMAN, V. Ye.

"Theory of Probabilities and Mathematical Statistics"

Teoriya Veroyatnostey i Matematicheskaya Statistika [English version above], Textbook for Institutes and Departments of Economic Engineering, Fourth Edition, Supplemented, Moscow, Vysshaya Shkola Press, 1972, 368 pp (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V87, from the Foreword)

Translation: This is the fourth, supplemented edition of this book (RZhMat, 1967, 5V96). Three chapters have been added: exponential distributions, statistical testing of statistical hypotheses, and single-factor dispersion analysis. A number of new problems are discussed: streams of random events, distributions related to the normal, mathematical expectation of a function, etc. Some changes and refinements have been introduced. The Pierson criterion is restated and moved from Chapter XVI to Chapter XIX. The name of the book has been changed.

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USSR

. GMYRYA-NOVI, V.A.

UDC 612.822.3

HMYRYA, V. A., and VASECHKO, T. V., Department of Cerebral Cortex Physiology, Institute of Physiology imeni O. O. Bogomolets, Academy of Sciences Ukrainian SSR

GMIRYA

"Analysis of Evoked Potentials With Initial Electronegativity"

Kiev, Fiziolohichnyy Zhurnal, Vol 19, No 2, 1973, pp 171-177

Abstract: Previously, the authors delineated two areas in the auditory cortex -- in the anterior and posterior superior regions of the superior temporal gyrus -- in which the primary evoked potential (PEP) was preceeded by a negative wave. Presently, further evaluation of these areas was performed under the influence of cold and mechanical pressure on these "negative" centers, and a layer by layer analysis was made of the focal potentials at different depths in response to stimuli with different frequencies (clicking). PEP were obtained with monopolar electrodes; control data were obtained from dogs under pentobarbital anesthesia (35 mg/kg). Localized cooling was achieved with a narrow ice-filled test tube applied for 1.3 and 5 min (no mechanical effect), and PEP studies were commenced within a few seconds and continued for 30-40 min. Mechanical pressure was applied by means of an electrode tip (0.5 mm

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GMYRYA-NOVI, V.A.
HMYRYA, V. A. and VASECHKO, T. V., Fiziolohichnyy Zhurnal, Vol 19, No 2, 1973, pp 171-177

diameter) covered by filter paper soaked with a physiologic solution. Focal potentials at different depths were obtained with electrodes 20-50 μ in diameter. The results showed that short-term cooling of the auditory zone A-1 (A-1) prolonged the duration of the positive wave on the PEP, but decreased its amplitude; in some cases the secondary negative wave was eliminated. The latent period of the response was not altered. Long-term cooling of A-1 resulted in the disappearance of PEP for several seconds to minutes, followed by a gradual return: first the positive wave returned and, 15-20 min later, the negative wave reappeared. In addition, while prior to cooling the "+-" complex of the PEP was characterized by a negative wave with a much greater amplitude, after repeated coolings the amplitudes of the positive and negative waves were equal for some time. In the negative centers short-term cooling depressed the amplitude of the negative wave, with its subsequent restoration in 3-5 min. Long-term cooling caused the negative potential to disappear initially, and reappear in 5 to 30 min. In these centers with a "-+" type of PEP complexes, cooling eliminated the negative wave and, on long-term application, depressed the amplitude of the positive wave. Occasionally, classical PEP were seen in these centers on cooling along with the PEP with initial electronegativity;

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GMYRYA-NOVI, V.A.

GMYRYA, V. A. and VASECHKO, T. V., Fiziolohichnyy Zhurnal, Vol 19, No 2, 1973, pp 171-177

the former disappeared 10-30 min after cooling was discontinued. Changes in PEP similar to those elicited by cooling were obtained with the application of mechanical pressure in A-1 and in the negative centers. Both cooling and pressure caused slow rhythms to become dominant on the EEG. In A-1 progressive insertion of electrodes into deeper layers resulted in inversion of PEP polarity at a depth of 0.5-0.8 mm. Prior to inversion, there was a gradual diminution of the positive wave and eventual disappearance. Subsequently, negative polarity appeared with initially increasing and then decreasing amplitude and eventual disappearance at 1.5-2 mm. Superficial electrodes and those at a depth of 0.3 mm picked up PEP in response to stimuli with a frequency of 15 hertz. At 0.5 mm stimuli with a frequency of 5 hertz elicited PEP occasionally. At 0.6 mm polarity reversal occurred with a 5 hertz stimulus, but a 10 hertz stimulus elicited a response only 54% of the time. At 0.9 mm the amplitude of the negative potential increased and responses were obtained to greater frequencies; at greater depths the amplitude diminished and responsiveness dropped sharply. No inversion of potential was observed in the negative centers, but the amplitude of the negative potential decreased as the electrode was inserted deeper, with a concomitant decrease in responsiveness to high

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GMYRYA-NOVI, V.A.

HMYRYA, V. A. and VASECHKO, T. V., Fiziolohichnyy Zhurnal, Vol 19, No 2, 1973, pp 171-177

frequency stimuli. With the electrode on the cortical surface of the negative centers, responses with initial electronegativity were obtained to stimuli with a frequency of 15 hertz, at 0.9 mm responses were seen only to stimuli with a frequency of 5 hertz, and at 2 mm a response was obtained to only 70% of the hertz stimuli.

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USSR UDC 621.382.002

GARBER, R.I., GVERDTSITELI, I.G., GNAP, A.K., GULDAMASHVILI, A.I., MODLIN,A.A., FEDORENKO, A.I.

"Study Of Radiation Damage Of Single Crystals Of Silicon After Doping With Boron Ions With An Energy Up To 100 Kev"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals--Collection Of Works), Vol. 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 133-138 (from RZh--Elektronika i yeyo primeneniye, No 10, October 1971, Abstract No 10B25)

Translation: The extent of radiation damage in the depths of a doping layer was determined by the method of layered atomization [raspyleniye] by bombardment by a beam of Ag^+ ions with an energy of 1 kev and a current density of 10 microamp. cm^{-2} with subsequent study of the pattern of the deposits on glass collectors with a central 2-mm aperture for transmission of the beam of ions. 3 ill. 7 ref. I.M.

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UDC 621.382.002

GARBER, R.I., GNAP, A.K., KOZLOV, V.P., PISTRYAK, V.N., POREL', Yu.N., FEDORENKO, A.I.

"Mass Spectrometric Determination Of Impurity Profile Of Boron In Ion-Doped Single Crystals Of Silicon"

V sb. Radiats. fiz. nemet.kristallov. (Radiations Physics Of Nonmetallic Crystals--Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 143-148 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B438)

Translation: The impurity profile of atoms of boron implanted in monocrystalline silicon with various orientations was determined by the method of secondary ion-ionic emission. The scheme of the mass spectrometic arrangement is presented, as well as typical impurity profiles of barium in Si specimens. 3 ill. 7 ref. I.M.

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USSR

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PISTRYAK, V. M., GNAP, A. K., KOZLOV, V. F., GARBER, R. I., FEDORENKO, A. I., FOGEL', Ya. M., Physico-Technical Institute, Academy of Sciences, Ukr SSSR, Kar'kov.

"Distribution Profile of 30 and 100 KEV Boron Ions Intersticed in Silicon"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 4, April 1970, pp 1281-1283

Abstract: Monocrystalline specimens of n-type silicon with (111) and (110) crystallographic orientations were investigated after alloying with ions of boron with energies of 30 and 100 kev in an accelerating unit with mass separations. Determination of the distribution profile of the boron ions intersticed in silicon during ion alloying was performed by a method of secondary ion-ionic emission on a mass--spectrometric device. Laminar sputtering of the specimens of ion-alloyed silicon (speed of sputtering $\sim$ 0.0015 micron/sec) was produced by a beam of primary ions with energies of 14 kev and a current density of 0.1 ma/cm^2. The secondary ions B_{11}^+ isolated by the magnetic analyzer were registered by an ion counter. The distribution profiles have satisfactorily narrow maxima embedded at depths of 0.3 micron (30 kev) and 0.43 micron (100 kev) for the (111) plane, and 0.33 micron (30 kev) and 0.49 micron (100 kev) for the (110) plane. The difference in the depths of the maxima of the distribution profile of the impurity at

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PISTRYAK, V. M., et al, Fizika Tverdogo Tela, Vol 12, No 4, April 1970, pp 1281-1283

the same energies of the incident ions, but different crystallographic orientations of the targets, is explained by the better conditions of channeling of the incident particles in crystals with (111) orientations as compared with those of (111) orientations. The authors thank I. G. Gverdtsitel and A. I. Guldmashvil for the specimens submitted and for useful discussions. 1 fig. 6 ref. Received by editors 19 December 1969.

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1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EXCITON PHONON INTERACTION IN CADMIUM SULFIDE -U-

AUTHOR-(02)-GNATENKO, YU.P., KURIK, M.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1143-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--CADMIUM SULFIDE, PHONON, EXCITON, ABSORPTION BAND SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0378 STEP NO--UR/0181/70/012/004/1143/1148

CIRC ACCESSION NO--AP0126133

UNCLASSIFIED

2/2 024 UNCLASSIFIED

CIRC ACCESSION NO--AP0126133 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS WERE CARRIED OUT OF THE URBACH RULE AND THE SHAPE OF THE A ABSORPTION BAND AT 4.2-300DEGREES K. IT FOLLOWS FROM THE ANAL. OF THE URBACH RULE THAT EXCITON PHONON INTERACTION IN CDS AT LOW TEMPS. IS WEAK, THE MAGNITUDE OF INTERACTION BEING APPROX. 0.27. THE LONG WAVELENGTH BRANCH OF THE EXCITON ABSORPTION BAND IN CDS IS FORMED BY PHONONS, THE ENERGY OF WHICH IS CLOSE TO THE ENERGY OF TRANSVERSE ACOUSTICAL PHONONS. THE SHAPE OF THE A ABSORPTION BAND IS APPROXIMATED BY THE VOIGHT FUNCTION. THE PARAMETERS OF THIS FUNCTION WERE DETD. FROM THE TEMP, DEPENDENCE OF THE SHAPE OF THE ABSORPTION BAND, IT WAS FOUND THAT THIS ABSORPTION BAND IS FORMED MAINLY BY PHONONS CLOSE IN ENERGY TO LONGITUDINAL OPTICAL PHONONS. FACILITY: INST. FIZ., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 535.44:621.378

BELOKRINITSKIY, N. S., GNATOVSKIY, A. V., DANILEYKO, N. V., ZAKHAROV, V. P., and SHPAK, M. T.

"Holographic Recording of Information on Amorphous Semiconductor Films"

Leningrad, Doklady Akademii Nauk SSSR, Vol 209, No 2, 1973, pp 330-332

Abstract: This paper is a report on the application of local variations in the structural and optical characteristics of InSb, InSe, InTe, GaTe, GeTe, and Te for holographic information recording. In an earlier paper (N. S. Belokrinitskiy, et al, Pis'ma v ZhETF, 15, No 4, 1972, p 198) it was found that in GeTe films under strong light pulses a growth of crystallites was observed, accompanied by changes in the physical and optical characteristics of the compound. Similar characteristics, including the transmission and absorption spectra, were explored in the present paper for the compounds listed above. The equipment used for the holographic recording is shown in schematic form. Records of objects measuring 2X2 mm^2 to 15X15 mm^2 were made by illuminating them directly with neodymium and ruby lasers. Samples of the images obtained are shown. The authors thank V. N. Pavlyuk for running the experiment.

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BELOKRINITSKIY, N. S., GNATOVSKIY, A. V., DANILEYKO, M. V., ZAKHAROV, V. P., KOZLOV, A. V., and SHPAK, M. T., Physics Institute, Academy of Sciences Ukrainian SSR

"Recording of Optical Information on Amorphous Films of Semiconducting Compounds"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 198-200

Abstract: The article describes a new optical information method based on local variations in structural and optical characteristics of some semiconducting compounds under the action of laser radiation. This opens up the possibility of creating carriers with a high recording speed (10^{-4}-10^{-5} sec) and high spatial resolution without the need for subsequent processing. Amorphous GeTe and InSb films, vacuum-evaporated on glass and NaCl substrates, were used by the authors as carriers for optical signal recording. Laser radiation by a semitransparent mirror was separated into two beams approximately equal in intensity and directed at the sample at a convergence angle of ~ 55° for GeTe

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BELOKRINITSKIY, N. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 198-200

and ~ 25° for InSb. The interference hologram grating of the radiation field was recorded on the film. Samples were exposed to radiation pulses of a free-running ruby (λ = 0.69 micron) and neodymium (λ = 1.06 microns) laser. Given a sufficiently homogeneous laser field amplitude distribution, interference gratings with a spatial frequency of up to 1000 lines/mm were obtained, representing alternating segments with different spectral and structural properties. There was found to be a relation between the sample preparation conditions and the maximum attainable spatial frequency. There are optimal radiation energies for the pulse-mode recording of gratings (e.g., ~ 0.1 j/sq mm for recording on GeTe films with pulsed neodymium laser radiation ~ 500 microseconds in duration). The authors observed two forms of film structural changes accompanying the information recording, depending on the density of the recorded grating. In the recording of gratings with a spatial frequency of ~ 100-200 lines/mm, the lines represent bands of polycrystalline material, films in an amorphous state divided in segments. In the recording of gratings with a spatial frequency of

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BELOKRINITSKIY, N. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 198-200

~1000 lines/mm, grain enlargement is observed over the entire area of the film segment being treated with luminous radiation, but the optical density of the interference grating lines differs, making it possible to obtain a grating with sufficient efficiency in this case as well.

Work is continuing on the further kinetic study of the amorphous state-polycrystal phase transition of the above-indicated materials and a number of others, as well as the study of their use as carriers for recording information in the visible and IR region of the spectrum.

The authors thank V. S. SAMOYLOV for useful discussions of the results.

USSR

UDC 612.375

BONDARENKO, M. D., GNATOVSKIY, A. V., and SOSKIN, M. S., Institute of Physics, Academy of Sciences UkrSSR, Kiev

"Radiation Divergence in Solid-State Lasers"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 4, Apr 71, pp 529-538

Abstract: A method of determining the field in the far zone on the basis of the known amplitude-phase distribution of the near field is examined, and a theoretical analysis of the contribution made by the amplitude and phase inhomogeneities of the near field to radiation divergence is presented. It is noted that decreasing the divergence of radiation remains one of the most important problems in improving the characteristics of laser radiation. Divergence in the case of an ideal resonator of the Fabry-Perot interferometer type for the lowest transverse type of oscillations is $\phi_0 = 1.22\ \lambda/d$, where d is the diameter of the region in the near zone occupied by the radiation, under conditions of low loss. In actual solid-state lasers there is a considerable increase in the divergence of radiation as compared with that theoretically possible. Among the reasons for this are conditions for excitation of the active medium, its optical imperfections, defects in the

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BONDARENKO, M. D., et al, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 4, Apr 71, pp 529-538

resonator mirrors, etc. All these reasons together, as a rule, lead to a complex irregular distribution of the amplitude and phase of the field in the near zone of the resonator. The amplitude and phase configurations of the near field and the degree of its spatial coherence make a contribution to the angular distribution of radiated energy. A study of the effect of each of these factors on the magnitude of the radiation divergence of a laser is one of the important problems in quantum electronics. The field structure in the far zone is calculated with the aid of the method on the basis of an experimentally determined configuration of the near field of the radiation of a ruby laser. The calculated structure is in good agreement with the structure observed experimentally.

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USSR

UDC: 536.46:533.6

GLUKHOV, V. I., GNATOVSKIY, V. I.

"Agglomeration of Metal Particles During Burning in Ballistite Powder"

V sb. Fiz. aerodispersn. sistem. Vyp. 3 (Physics of Aerodisperse Systems --collection of works, No 3), Kiev, Kiev University, 1970, pp 119-125 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B806)

Translation: Incomplete combustion of particles of dispersed metals and the correspondingly lower than theoretical effect of metal combustion on burning of a metal-powder system is attributed to the appreciable coarsening (agglomeration) of metal particles before ignition. This paper analyzes the nature of particle agglomeration as a function of the percent concentration of metal in the powder, the properties of the metal and the methods of particle treatment. As a result of comparing the effective times of combustion, it is found that adding ten percent of an Al+Mg alloy (PAM) to the powder increases the HB of a particle with respect to mass by a factor of more than 10 as compared with a one-percent addition of metal. This is also shown by large-scale high-speed motion picture photography, agglomeration being more appreciable if a metal with low ignition

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GLUKHOV, V. I., GNATOVSKIY, V. I., Fiz. aerodispersn. sistem, vyp. 3, Kiev, Kiev University, 1970, pp 119-125

point is added; agglomeration includes the nitrocellulose of the powder. The agglomeration may be so appreciable that it grows into pulsations in combustion (luminescence). Depending on the properties of the dispersed metals introduced, the transition takes place at various concentrations of metal in the powder. For more readily flammable particles of metal, the pulsations appear at a lower concentration of metal in the powder. A mechanism is proposed for coarsening of the particles due to coalescence on the surface of a burning specimen of powder. Authors' abstract.

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[illegible] 2

UDC: 620.178.162

BABEY, YU. I., GOLUBETS, V. M., VYGOVSKIY, I. P., RYABOV, B. F., and GNATYSHAK, N. N.

"Effect of White Layer on Wear Resistance of 50X Steel"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 5, 1971, pp 7-10

Abstract: An experimental investigation of the effect of white layer on the wear resistance of 50Kh(0.4[illegible] C, 0.23% Si, 0.65% Mn; 1% Cr, 0.2[illegible]% Ni) steel was conducted.

The white layer was formed by turning the specimen journal ring on the lath, with [illegible] m/min cutting speed and 0.15 mm depth of cut, or by means of mechanical-ultrasonic treatment.

Test showed that the wear resistance of the specimens with white layer was equal to the ones, which were quenched at 850°C and drawn at 150°C. The wear of [illegible] about one third of the wear of unimproved specimens. The wear of [illegible] steel bushings rubbing against these specimens was reduced [illegible].

The white layer [illegible] by quenching and drawing due to the heat generated by the cutting [illegible].

The [illegible] shows that the content of [illegible],

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200920014-1"

.Y, YU, I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 5, 1, pp 7-10

arone and other carbide-forming elements is higher in the white layer and lower in the sublayer than in the original metal.

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USSR

UDC: 537.311

ANTONOV, YE. A., GNATYUK, L. N., STEPANOV, B. M., FILENKO, YU. I., and TSARFIN, V. YA., Moscow

"Study of the Electric Explosion of Conductors by the Holography Method"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 6, Nov-Dec 72, pp 1210-1213

Abstract: Experiments have been reported on the registration of various stages of the explosion of conductors [EC] in air and in water by the usual dual beam system using holographic method of double exposure. From the data obtained the rate of the scattering of fragments has been determined to be about 150 m/sec, the velocity of the shock wave -- 500 m/sec, and the concentration of electrons in the plasma -- $N_{e_{max}}$ $4.8 \cdot 10^{18}$ cm^{-3}. The holographic method is by far more universal and promising than the photographic method for the registration of the phenomena accompanying EC. The size of the subject being studied, the ability to study EC independently of the specific luminescence of the object, no requirements placed on high quality optical elements in the systems forming radiation streams, all these aspects favor holography for the registration of rapid processes occurring during electric EC.

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1/2 043 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--NARROW LINE RUBY LASER -U-

AUTHOR-(05)-VINOGIN, YU.P., GNATYUK, L.N., NIKASHIN, V.A., SAKHAROV, V.K., TARASOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(1), 168-70

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RUBY LASER, MULTISTAGE LASER, LASER EMISSION COHERENCE, LASER MODULATION, LASER PULSE, LASER POWER OUTPUT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0368 STEP NO--UR/0051/70/028/001/0168/0170

CIRC ACCESSION NO--AP0055153

UNCLASSIFIED

2/2 043 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0055153
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO LASERS WERE USED IN THE SYSTEM OPERATING STABLY IN A SINGLE FREQUENCY REGION AND THE OTHER AN OUTPUT LASER WITH A PHOTOTROPIC SHUTTER, THE INITIAL ILLUMINATION OF WHICH IS PRODUCED BY THE RADIATION OF THE 1ST LASER. THE ACTIVE ELEMENT OF THE 1ST LASER WAS A HIGHLY UNIFORM RUBY CRYSTAL WITH SAPPHIRE CAPS 12 CM LONG AND 10 CM DIAM. THE QUALITY MODULATOR WAS A SOLN. OF PHTHALOCYANINE IN PHNO SUB2. SINGLE FREQUENCY OPERATION WAS MAINTAINED BY INCREASING THE PUMPING ENERGY 10PERCENT ABOVE THAT OF THE THRESHOLD. THE CRYSTAL OF THE 2ND LASER WAS 24 CM LONG AND 16 MM DIAM. THE SYSTEM USED CAN PRODUCE A POWERFUL SINGLE PULSERADIATION OF VERY NARROW SPECTRAL COMPN.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--19SEP70

TITLE--A RUBY LASER WITH A NARROW EMISSION LINE -U-

AUTHOR-(05)-VINOGIN, YU.P., GNATYUK, L.N., NIKASHIN, V.A., SAKHAROV, V.K., TARASOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, JAN. 1970, P. 168-170

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RUBY LASER, LASER RADIATION, LASER EMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1676 STEP NO--UR/0051/70/028/000/0168/0170

CIRC ACCESSION NO--AP0047994

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0047994

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE POSSIBILITY OF CREATING A SOURCE OF FAIRLY POWERFUL MONOPULSE RADIATION OF NARROW SPECTRAL COMPOSITION. TWO GENERATORS WERE USED IN THIS STUDY: THE FIRST STABLY OPERATING IN A SINGLE FREQUENCY REGIME (ONE TRANSVERSE AND ONE LONGITUDINAL MODE), WHILE THE SECOND, THE OUTPUT GENERATOR, IS A LASER WITH A PHOTOTROPIC Q SWITCH, THE INITIAL BLEACHING OF WHICH OCCURS AS A RESULT OF THE RADIATION OF THE FIRST LASER.

UNCLASSIFIED

USSR

UDC 615.355.099

PRIPUTINA, L. S., OBBARIUS, I. D., BOTSMAN, N. YE., GNATYUK, V. N., and SVETLAYA, G. V., Laboratory for the Investigation of Food Additives, Kiev Scientific Research Institute of Nutritional Hygiene

"Determination of the Toxicity of Enzymatic Preparations of Microbal Origin Designed for Use in the Food Industry"

Moscow, Voprosy Pitaniya, No 6, Nov/Dec 71, pp 43-48

Abstract: The amylolytic preparation Nigrin SR, made from Asp. niger strain EU-119 and used in the production of juices and nonalcoholic beverages, and a second enzymatic prepatation, made from Asp. oryzae strain 476-I and used in brewing of beer, were tested on white rats and ducklings. The preparations caused a reduction in serum antibodies, an increase in the relative weight of the liver, a decrease in the DNA phosphorus concentration in the liver, changes in liver glycogen content, hyperemia of the spleen, hyperplasia of lymphatic tissues, and degenerative changes in the liver and other organs. The disorders are ascribed to the presence of the fungi's metabolic products and unindentified fluorescent substances in the preparations. It is concluded that the Nigrin SR preparation may be used after purification by the method described.

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1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--KNOCK RATING OF LIQUEFIED GASES ON THE IT9 APPARATUS -U-

AUTHOR--GNATYUK, YE.V., PEVNEV, N.G.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3), 46-9

DATE PUBLISHED--------70

SUBJECT AREAS--PROPULSION AND FUELS, MATERIALS

TOPIC TAGS--MOLECULAR WEIGHT, HEPTANE, PENTANE, BUTANE, ETHANE, METHANE, LIQUID GAS PROCESSING, TEST METHOD, FUEL OCTANE RATING, FUEL TEST, PHYSICS LABORATORY INSTRUMENT/(U)IT9 OCTANE TEST APPARATUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/2057 STEP NO--UR/0065/70/015/003/0046/0049

CIRC ACCESSION NO--AP0109989

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2/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109989

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KNOCK RATING OF LIQUEFIED GASES CONTG. C SUB1-C SUB5 HYDROCARBONS WAS DETD. ON THE OCTANE HEPTANE SCALE. THE OCTANE NO. OF THE GASEOUS MIXT. WAS EQUAL TO THE SUM OF OCTANE NOS. OF ITS N AND ISOPARAFFINIC AND OLEFINIC HYDROCARBON COMPONENTS MULTIPLIED BY THEIR VOL. CONCNS. THE SENSITIVITY OF THE PARAFFINIC COMPONENTS INCREASES WITH THEIR DECREASING MOL. WT.

UNCLASSIFIED

USSR

GNEDENKO, B. V.

"Asymptotic Methods and Problems of Operations Research"

Issled. Operatsii. Metodol. Aspekty. [Operations Research. Methodological Aspects -- Collection of Works], Nauka Press, Moscow, 1972, pp 29-42, Discussion 92-135 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V747).

Translation: Queueing theory, reliability theory and the theory of control of reserves are discussed.

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USSR

GNEDENKO, B., Academician of the Academy of Sciences UkrSSR

"On the Future of Applied Mathematics"

Moscow, Nauka i Zhizn', No. 1, 1970, pp 42-47

Abstract: Noting the ever increasing importance and utilization of mathematics in all areas of science, engineering, medicine, and economics, the author notes that all mathematics should be considered as applied mathematics. The following fields of mathematics are named as especially important at the present time: mathematical logic; probability theory, including the theory of random processes and random fields; mathematical statistics; linear programming; the mathematical theory of optimal control; and information theory. Problems of teaching mathematics are discussed: what to teach and to whom to teach it. It is pointed out that with the adherence to traditional teaching methods modern youth remains at a level of mathematical development as it existed 100 years ago. The traditional content of school and vuz education is criticized for the prevalence of a strictly deterministic representation of the laws of nature. This article is a condensed version of an article to be published in the third issue of the annual "Budushcheye nauki" (Future of Science) published by Znaniye Publishing House.

Card 1/1

USSR

UDC519.21

GNEDENKO, B. V., KHINCHIN, A. Ya.

"Elementary Introduction to the Theory of Probabilities"

Elementarnoye Vv edeniye V Teoriyu Veroyatnoystey, [English Version Above], 7th Edition, Supplemented, Moscow, Nauka Press, 1970, 167 pages, (Translated from Referativnyy Zhurnal Kibernetika, No. 5, 1971, Abstract No. 5V126 K).

Translation: The seventh, supplemented edition of the widely known book by the authors (RZhMat. 1962, 9V36).

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USSR UDC: 621.376.5(088.8)

GNEDIN, I. N., PSHENICHNIKOV, V. I.

"A Pulse Modulator"

USSR Author's Certificate No 263664, filed 6 Oct 67, published 12 Jun 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D465 P)

Translation: This Author's Certificate introduces a pulse modulator which contains a high-voltage DC supply with charging choke and isolating diode, an ionic commutator based on a thyratron with ignition oscillator, an accumulator shunted by a clipper element, and a load. To increase the prf of the shaped pulses, the modulator is equipped with an additional damping accumulator which is connected in parallel with the commutator through an additional isolating diode connected in the charging circuit between the choke and the main accumulator. V. P.

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USSR

UDC: [621.313.322-81:537.312.62]001.24

BORZOV, G. G., GLEBOV, I. A., GNEDIN, L. P., DOMBROVSKIY, V. V., NOVITSKIY, V. G., SHAKHTARIN, V. N., Leningrad

"Problems in the Development of High-Power Turbogenerators With Superconductive Field Windings"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 21-28

Abstract: The authors point out the advantages of cryogenic turbogenerators over conventional units. Elements of construction of high powered cryogenic turbogenerators are described, and the results of model tests are presented. The analysis shows that using superconductors in the field windings increases the unit power of turbogenerators by an order of magnitude. The results of experimental studies confirm the feasibility of a synchronous machine with rotating cryostat that has low liquid helium evaporability and provides torque transfer. The realization of high-power cryogenic turbogenerators must wait for a great deal of research on development of new materials, structural and refrigeration units, and automatic monitoring and control systems.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--POLARIZATION OF PARTICLES AND QUANTA SCATTERED BY THICK LAYERS OF MATTER -U-

AUTHOR-(03)-GNEDIN, YU.N., DOLGINOV, A.Z., SILANTYEV, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 2, PP 706-720

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LIGHT POLARIZATION, ANGULAR DISTRIBUTION, PARTICLE SCATTER, LIGHT SCATTERING, NEUTRON POLARIZATION, SPIN ORBIT COUPLING, NEUTRON SCATTERING, OXYGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1976/2068 STEP NO--UR/0056/70/058/002/0706/0720

CIRC ACCESSION NO--AP0043595

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0043595

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR CALCULATING THE POLARIZATION AND ANGULAR DISTRIBUTION OF SPIN ONE HALF PARTICLES AND OF QUANTA SCATTERED BY A PLANE LAYER OF LARGE OPTICAL DENSITY. POLARIZATION OF PHOTONS REFLECTED AND TRANSMITTED BY AN OPTICALLY THICK MEDIUM CONSISTING OF FREELY ORIENTED PARTICLES (ELECTRONS, ATOMS, DUST GRAINS) IS CALCULATED ON THE ASSUMPTION THAT THE INITIAL PHOTON BEAM IS INCIDENT AT AN ARBITRARY ANGLE TO THE SURFACE OF THE MEDIUM AND POSSESSES AN ARBITRARY POLARIZATION. ANALYTIC FORMULAS ARE ALSO OBTAINED WHICH DESCRIBE THE POLARIZATION OF NEUTRONS SCATTERED BY A PLANE LAYER OF MATTER, THE POLARIZATION BEING DUE TO SPIN ORBIT INTERACTION WITH THE NUCLEI. A NUMERICAL CALCULATION CARRIED OUT FOR THE O PRIME16 NUCLEUS SHOWS THAT THE POLARIZATION MAY BE QUITE LARGE. THIS PERMITS ONE TO OBTAIN AN INTENSE NEUTRON BEAM WITH A POLARIZATION OF SEVERAL TENS OF PERCENT.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200920014-1"

GNESIN, G.G.

MHD

(9)

JPRS 61609

29 March 1974

RESEARCH ON MATERIALS FOR THE MANUFACTURE OF OPEN-CYCLE MHD GENERATOR ELECTRODES

[Article by G. V. Samsonov, V. M. Sleptsov, G. G. Gnesin, V. S. Fomenko, I. A. Podchernyayeva, Yu. K. Lapshov (Institute of Problems of Hylology, Academy of Sciences UkrSSR), G. M. Shcheglev, Yu. F. Kukota (Institute of Industrial Thermophysics, Academy of Sciences UkrSSR), E. P. Strashinin (Institute of Electrodynamics, Academy of Sciences UkrSSR); Kiev, Issledovaniye Materialov dlya MGDG Otkrytogo Tsikla, Russian, 1971, pp 393-409]

Annotation

Presented in this paper are the results of testing of gas-permeable blown electrodes under model MHD conditions. The tests revealed that the erosion resistance of protected materials is increased by a factor of 50 to 100 while the current density is 2-3 A/cm^2 (in the distributed discharge mode) and up to 20 A/cm^2 in the arc mode.

The interaction between air plasma containing compounds of alkali metals as additive, and the surface of electrodes, protected by blowing and without protection, was investigated. The results of tests of electrodes made of nonporous polycrystalline silicon carbide, produced by the reaction sintering method, are presented in this work. The physical properties which govern the operational performance of the electrodes are analyzed. It is established that long-term operation of the electrodes does not result in change of the phase composition and properties of polycrystalline silicon carbide. Erosion and chemical destruction occurs only on the surface of electrodes.

The composition of the film formed on the surface of a silicon carbide electrode during operation in contact with plasma containing potassium additive is analyzed. It is shown that the continuously forming silicate film substantially increases the emissivity of silicon carbide.

The electrode of an MHD generator should satisfy two main requirements: a) resistance to the aggressive action of the plasma jet for a long

USSR

UDC 621.762.001:669.782'784

GNESIN, G. G.

"Nonporous Polycrystalline Silicon Carbide and Its Use in High-Temperature Technology"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- Collection of Works), Kiev, "Nauk. Dumka," 1970, pp 62-67 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G375 by authors)

Translation: The article describes the technology of producing nonporous polycrystalline silicon carbide and articles from this material. A structure formation mechanism is suggested for the material. Results of the determination of the physical properties of nonporous polycrystalline silicon carbide are presented, and some of its properties are compared with the properties of other carborundum materials and refractory compounds. Recommendations are made for the industrial use of products made of nonporous polycrystalline silicon carbide. Two illustrations. Three tables. Bibliography with nine titles.

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1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STRUCTURE FORMATION OF POLYCRYSTALLINE SILICON CARBIDE -U-

AUTHOR-(04)-GNESIN, G.G., PILYANKEVICH, A.N., KUZNETSOVA, O.V., OLEYNIK, G.S.

COUNTRY OF INFO--USSR

SOURCE--POROSHKOVAYA MET., APR. 1970, (4), 49-53

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SILICON CARBIDE, CARBIDE ABRASIVE, REFRACTORY MATERIAL, SINTERING FURNACE, PHASE COMPOSITION, GRAIN STRUCTURE, SINTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0637 STEP NO--UR/0226/70/000/004/0049/0053

CIRC ACCESSION NO--AP0134399

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134399

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF POLYCRYSTALLINE SIC MADE BY A REACTIVE SINTERING METHOD WAS STUDIED AND CORRELATED WITH THE ABRASIVE PROPERTIES OF THIS MATERIAL AS EXPLOITED IN THE GRINDING OF METALS AND ALSO WITH ITS HEAT RESISTANCE WHEN USED FOR THE LININGS OF FURNACES. ELECTROLYTIC ETCHING REVEALED THE PRESENCE OF A SECONDARY PHASE FORMED IN THE COURSE OF SINTERING; THE SECONDARY PHASE AROSE FROM THE MOVEMENT OF C ATOMS THROUGH THE MOLTEN SI AND APPRECIABLY MODIFIED THE MECHANICAL CHARACTERISTICS OF THE MATERIAL AS A WHOLE.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--SURGICAL AND COMBINED TREATMENT OF EPIBULBAR MELANOBLASTOMAS -U-

AUTHOR-(02)-STENKO, Z.L., GNETOVA, O.YE.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 85-90

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, TUMOR, EYE, MEDICAL NUCLEAR APPLICATION, NEOPLASM, METASTASIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0695 STEP NO--UR/0357/70/000/002/0085/0090

CIRC ACCESSION NO--AP0102679

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0102679
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMMEDIATE AND LATE RESULTS FOLLOWING TREATMENT OF 63 PATIENTS WITH EPIBULBAR MELANOBLASTOMAS ARE REPORTED. LOCAL EXCISION OF THE TUMOUR WAS DONE IN 56 AND EXENTERATION OF THE ORBIT IN 7 CASES. IN 16 PATIENTS SURGERY WAS APPLIED IN CONJUNCTION WITH RADIATION (BETA THERAPY, X RAY TREATMENT, TELEGAMMATHERAPHY) TREATMENT. THE TECHNIQUE OF LOCAL EXCISION OF THE TUMOUR WITH MANDATORY USE OF DIATHERMOCOAGULATION IS DESCRIBED. THE LATTER IS WELL TOLERATED BY THE EYE AND LEAVES BUT SMOOTH CICATRICES ON THE CONJUNCTIVA AND CORNEA. NO SERIOUS COMPLICATIONS IN THE POSTOPERATIVE PERIOD ARE ON RECORD. TUMOUR RECURRENCES DEVELOPED IN 8 CASES, WITH REPEATED LOCAL EXCISION UNDERTAKEN IN 5 OF THEM. FOLLOW UP PERIODS VARY FROM 1 TO 14 YEARS, WITH 29 PATIENTS TRACED OVER MORE THAN 5 YEARS. DEATH DUE TO THE LOCAL SPREAD OF THE NEOPLASTIC PROCESS AND TO METASTASES OCCURRED TO 5 PATIENTS. FROM THOSE ALIVE 4 PATIENTS EXHIBIT METASTASES. 2 OTHERS RELAPSES, THE REMAINING ONES SHOWING NO SIGNS OF RELAPSES AND METASTASES. THE AUTHOR'S OBSERVATIONS CONFORM TO THE LATEST DATA PUBLISHED IN LITERATURE SOURCES AND BOTH BEAR PROOF TO A MORE FAVOURABLE PROGNOSIS IN EPIBULBAR MELANOBLASTOMAS, BY COMPARISON WITH DERMAL MELANOBLASTOMAS. AT THE INITIAL STAGE OF EPIBULBAR MELANOBLASTOMA THE LOCAL REMOVAL OF THE TUMOUR IS QUITE POSSIBLE.

UNCLASSIFIED

GNEZDILOV A.A.

Acc. Nr.: AP0042574

Ref. Code: UR0033

JPRS 50162

Two-Dimensional Structure of a Noise Storm

(Abstract: "Determination of the Two-Dimensional Structure of a Noise Storm of 20 May 1966 on the Basis of Eclipse Observations at Four Stations," by A. A. Gnezdilov, Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation; Moscow, Astronomicheskiy Zhurnal, Vol 47, No 1, 1970, pp 76-81)

This paper gives the results of an analysis of observations of the solar eclipse of 20 May 1966 at four stations (Simeiz, Kiev, Gor'kiy and IZMIRAN). Observations were at frequencies close to 200 Mc/sec. In the analysis the author takes into account the refraction of radio emission in the solar corona and gives some validation for the hypothesis of a radial position of the source of the noise storm over spot group No 60, observed on this same day at the northeastern limb of the solar disk. It follows from the analysis that the noise storm source consisted of a compact source of increased radio emission with a visible dimension of less than 1', a region of emission of the continuous background of the noise storm measuring 3'.3 x 2'.1 and a region of generation of a type-I burst measuring 1'.5 x 2'. The centers of the emission components were situated at altitudes equal to 0.21, 0.27 and 0.32 solar radii respectively above the surface of the photosphere.

Reel/Frame
19760558

1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--PREPARATION OF SODIUM FLUORIDE SOLUTIONS FROM FLUOROSILICIC ACID AND A SODA SOLUTION -U-

AUTHOR--KAVNATSKAYA, B.S., PRIVEN, E.M., GNEZDILOVA, L.M., SHKOLNIK, N.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (1) 59-60

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, CHEMISTRY

TOPIC TAGS--SODIUM FLUORIDE, INORGANIC ACID, SILICON COMPOUND, CRYOLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1335 STEP NO--UR/0436/70/000/001/0059/0060

CIRC ACCESSION NO--AP0106112

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMAL CONDITIONS FOR THE CONVERSION OF H SUB2 SIF SUB6 BY PRODUCT IN SUPERPHOSPHATE PLANTS INTO NAF SOLNS. BY REACTION WITH NA SUB2 CO SUB3 WERE OBTAINED EXPTL. THE NAF SOLN. IS USED FOR THE PRODUCTION OF NA SUB3 ALF SUB6. IT IS RECOMMENDED THAT A 10-12PERCENT ACID SOLN. AND A 5.5-6.5PERCENT NA SUB2 CO SUB3 SOLN. BE USED AT 85-90DEGREES. THE REACTION IS COMPLETED IN 45 MIN AND THE FILTRATE CONTAINS 3.5-3.8PERCENT NAF. PH HAS TO BE KEPT BETWEEN 6.8 AND 8. THE FILTER RESIDUE IS USED FOR PRODUCTION OF NA SILICATE. FOR THE PREPN. OF NA SUB2 CO SUB3 SOLNS. THE MOTHER LIQUORS OF THE CRYOLITE PRODUCTION ARE USED.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ELECTRICAL, PHOTO, AND THERMOELECTRIC PROPERTIES OF THIN FILMS OF ALKALI METAL ANTIMONY SULFIDES AND SELENIDES -U-

AUTHOR-(05)-GNIDASH, N.I., SUKHORUKOVA, L.N., KUZNETSOV, M.S., FINKELSHTYN, YA.G., BERUL, S.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 237-40

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--THIN FILM SEMICONDUCTOR, PHOTOCONDUCTIVITY, THERMOELECTRIC PROPERTY, ABSORPTION SPECTRUM, ALKALI METAL COMPOUND, ANTIMONY COMPOUND, SULFIDE, SELENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1999 STEP NO--UR/0363/70/006/002/0237/0240

CIRC ACCESSION NO--AP0105073

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105073

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC., PHOTOELEC., AND THERMOELEC. PROPERTIES OF THIN FILMS PREPD. BY VACUUM SPUTTERING OF TERNARY COMPDS. OF THE A PRIMEI B PRIMEV C SUB2 PRIMEVI TYPE (WHERE A PRIMEI EQUALS LI, NA, K, OR CS; B PRIMEV EQUALS SB; AND C SUB2 PRIMEVI EQUALS S OR SE) WERE STUDIED. THE TERNARY COMPDS. WERE PREPD. BY INTERACTING SB SUB2 S SUB3(SB SUB2 SE SUB3) WITH THE FLUORIDES OF THE ALKALI METALS. THE FILMS OBTAINED HAVE SEMICONDUCTOR PROPERTIES. A NOTICEABLE PHOTOCOND. IS OBSD. FOR THE ALKALI METAL SB SELENIDES. FOR THE LATTER, SPECTRAL DISTRIBUTION CURVES FOR THE PHOTOCOND. WERE OBTAINED, FROM WHICH IT FOLLOWS THAT THE MAX. OF THE PHOTOCOND. LIE IN THE VISUAL SPECTRAL REGION NEAR THE LONG WAVELENGTH ABSORPTION EDGE OF THESE SUBSTANCES. MANY OF THE THIN FILMS ARE CHARACTERIZED BY A RELATIVELY LARGE DIFFERENTIAL THERMAL EMF. FACILITY: KHAR'KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

USSR UDC 612.6.02+617-089.8437(063)(476)"1969"

GNILORYBOV, T. YE., Honored Scientist, Professor, and KAZACHENOK, V. M., Candidate of Medical Science

"Belorussian Conference on Organ and Tissue Transplantation"

Leningrad, Vestnik Khirurgii imeni I. I. Grekov, No 1, 1970, pp 135-136

Abstract: The First Republic Conference on Organ and Tissue Transplantation was held in Minsk on 22-23 May, 1969. On the first day, the conference concerned itself with general problems and with transplants of individual organs and endocrine glands. Among the organs and glands discussed were the urinary bladder, spleen, ovaries, hypophysis, and suprarenals. A number of papers dealt with immunological problems. On the second day the conference took up skin and bone transplants, preservation and transplantation of bone marrow. Plastic surgery in the treatment and sequelae of burns, skin grafts in opthalmology, bone marrow transfusions in the treatment of hematopoietic disorders, and use of autologous and homologous tissues in orthopedics and traumatology were the subjects of most of the papers presented during this section of the conference.
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USSR

UDC 548.55

GNILOV, S. N., NASHEL'SKIY, A. YA., and VOL'PYAN, A. YE., State Scientific Research and Planning Institute of Rare Metals

"Programming the Rate of Growing Alloyed Single Crystals With a Constant Degree of Equilization"

Moscow, Neorganicheskiye Materialy, Vol 7, No 8, Aug 71, pp 1297-1300

Abstract: To obtain alloyed single crystals of semiconductor materials it is necessary to solve the problem of growing crystals alloyed simultaneously with two impurities, ordinarily the donors and acceptors, in order to produce a constant charge carrier concentration along the length of the crystal. This concentration ratio is

$$a = \overline{C}_d(g)/\overline{C}_a(g) ,$$

where $\overline{C}_g(g)$ and $\overline{C}_a(g)$ are the concentrations of non-volatile donor and acceptor impurities in the crystal and g is the fraction of crystallized volume carrying the name of the degree of compensation. The problem can be solved by programming the change in crystal growth rate. This article deals

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GNILOV, S. N., et al., Neorganicheskiye Materialy, Vol 7, No 8, Aug 71, pp 1297-1300

with the development of a method for programming the change in crystal growth rate by taking into account coefficients of distribution of phosphorus and gallium in germanium, calculating the maximum growth rate f, and then setting up the identities and equations which produce values which can then be analyzed and evaluated. Three figures, 1 table, 2 bibliographic references.

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GNILOV, S. V.

JPRS 59205

6-73

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III-13b. PROBLEM OF DETERMINING THE GROWTH RATE OF SINGLE CRYSTALS UNIFORMLY ALLOYED WITH RESPECT TO LENGTH OF THE VOLATILE ADMIXTURE

[Article by S. V. Gnilov, A. Ya. Nashel'skiy, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 39]

On the basis of the material balance of consumption of the volatile admixture from the melt into the growing crystal and arrival of it from the vapor phase into the melt during the process of its crystallization by the method of zonal equalization, an equation was derived which permits determination of the growth conditions of the crystals with uniform concentration with respect to length of the alloying admixture at a constant crystallization rate:

$$f = \alpha_{Ei} \cdot \frac{F}{S} \cdot \frac{C_p - C}{N}$$

where f is the growth rate of the crystal, cm/sec; α_{Ei} is the interaction constant of the admixture in the vapor phase with the melt, cm/sec; F is the free surface of the melt, cm^2; S is the area of the crystal cross section, cm^2; C_p is the equilibrium (for $f = 0$) concentration of the admixture in the melt for the given vapor pressure above the melt, $atoms/cm^3$; C is the concentration of the admixture in the melt, $atoms/cm^3$; N is the concentration of the admixture in the grown crystal, $atoms/cm^3$.

The equation which permits determination of the growth conditions of the crystal with uniform concentration of the alloying admixture with respect to length in the Czochralski process was obtained analogously for a constant crystallization rate:

$$f = \alpha_{Ei} \cdot \frac{F}{S} \cdot \frac{K}{K-1} \cdot \frac{C_p - C}{N}$$

where K is the effective distribution coefficient of the admixture. The analysis of this equation demonstrates that when the process takes place in a vacuum (at $K < 1$ and $C_p = 0$) it assumes the form of the equation previously derived by V. N. Romanenko [1].

BIBLIOGRAPHY

1. V. N. Romanenko, Polucheniye odnorodnykh poluprovodnikovykh kristallov (Obtaining Uniform Semiconductor Crystals), Metallurgiya, Moscow, 1966.

GNILOV, S. V.

SPIS 5928
6-73

III-13e. CALCULATION OF THE PROGRAM FOR VARIATION OF THE GROWTH AND ROTATION RATES OF A SINGLE CRYSTAL TO OBTAIN UNIFORM DISTRIBUTION OF THE ADMIXTURE WITH RESPECT TO ITS LENGTH

[Article by S. V. Gnilov, A. Ya. Nashel'skiy, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i Svoystva Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 38]

The joint variation of the growth rate f and the rotation rate ω of a single crystal permits a significant increase in the yield of its uniform part. The initial data for constructing the program for variation of f and ω with the process time t are the graphs of the effective distribution coefficient k as a function of f for different values of ω. In them, in accordance with the specific conditions of the process, the programming range is isolated which is limited by the maximum and minimum values of f and ω. Then the required sequence of variations of f and ω is noted.

The program for variation of f is calculated by the procedure discussed in reference [1]. For the case of programming the process only with respect to ω, the program is calculated by the graph of the initial data, assuming a proportion of the crystallized melt R which is proportional to the variation of k. When programming the process under the conditions of simultaneous variation of f and ω, the values of ω are found directly from the graph of the initial data for the corresponding values of f.

BIBLIOGRAPHY

1. S. V. Gnilov, A. Ya. Nashel'skiy, A. Ye. Vol'pyan, Tsvetnyye metally (Nonferrous Metals), No 10, 56, 1970.

USSR

UDC 548.55

VOL'PYAN, A. YE., GNILOV, S. V., NASHEL'SKIY, A. YA., State Scientific Research and Planning Institute of Rare Metals

"Design of a Program for Growing Single Crystals by the Method of Zonal Equalization With a Uniform Impurity Distribution Along the Length"

Moscow, Neorganicheskiye Materialy, Vol 7, No 8, Aug 71, pp 1301-1304

Abstract: Growing of alloyed single crystals by the method of zonal equalization is widely used for producing many semiconductors. The essence of the method is that an ingot of pure material has a calculated quantity of impurity added to it as the ingot makes its one and only melting pass. This report describes a simple and covenient method of programming the rate of propagation in the process of zonal equalization. The authors present examples of vaporization of alloying impurities and alloying from the gas phase and give examples of programs for growing crystals of germanium alloyed with phosphorus and antimony. In the examined cases, transition from zonal equalization with vaporization of an impurity to zonal equalization with a constant total amount of impurity in the ingot, and, further, to the zonal process of using an alloying mixture (impurity) from the gas phase lowers effectiveness of equalization for programmed change of the rate of movement of the melted zone. Four figures, 6 bibliographic references.

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USSR

UDC 669.783

GNILOV, S. V., NASHEL'SKIY, A. Ya., and VOL'PYAN, A. Ye.

"Establishing a Program for Single Crystal Growth From a Melt"

Moscow, Tsvetnyye Metally, No 10, Oct 70, pp 56-57

Abstract: The growing of single crystals with a uniform distribution of impurities and consequently, physical properties along the length, is one of the most important problems in the technology of pure substances and semiconductors. A procedure is suggested for establishing a program for the variation of the single-crystal growth-process parameters by the Bridgemen and Chikhral'skiy methods. A differential equation for the distribution coefficient variation in the process of single crystal growth is derived, from which the program equation is constructed. The determination of the program for germanium single-crystal growth rate variation with a uniform distribution of phosphorus admixtures along its length is considered as an example, and the results are presented in graphs.

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USSR

UDC 613.693

KURDYAYEV, K. V., Lt Col Med Serv, KOZACHA, P. G., Lt Col Med Serv, PEKSHEV, V.V., Maj Med Serv, and GNITSEVICH, V. M., Maj Med Serv

"Psychophysiological Characterization of the Work Performed by Air Force Transportation Flight Personnel in Low-Altitude Flights"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 5, 1973, pp 62-63

Abstract: In low altitude flights, because of impeded visual orientation and a reduced effective range of radio equipment, the pilot devotes 75-85% of his time to surveying the air space and ground surface ahead of him and to visually maintaining the altitude and course. In rough weather, these flights require not only concentrated attention but also a considerable physical effort and quick reactions each time the aircraft is pitched and tossed. All these factors cause nervous tension and emotional stress which are aggravated by frequent landings at unfamiliar airports. During stopovers, the flight personnel have little time to rest since they participate in loading and unloading. These specific aspects of low-altitude flights should be given careful consideration by the Air Force Transportation Medical Service. Since during prolonged flights over monotonous plains visual depth perception deteriorates, it is

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USSR

KURDYAYEV, K. V., et al., Voyenno-Meditsinskiy Zhurnal, No 5, 1973, pp 62-63

recommended periodically to rise higher altitudes for 3-5 min. Light-filtering spectacles should be worn during flights over large water bodies and snow-covered areas on sunny days. Transfer from high-to low-altitude flights presents definite difficulties even to experienced pilots. Air Force physicians should pay particular attention to pilots just learning low-altitude skills and to those physically weak and emotionally unstable. Physical examinations should be performed between and prior to flights, and training must be planned according to the results. It is especially important strictly to adhere to the schedule of drills of gradually increasing difficulty and to utilize all ground-training equipment prior to flights. Since it is seldom possible for pilots to get adequate pre-flight rest at home during daytime, suitable facilities for rest and some sports should be made available at the airport. Members of each crew should be selected according to mutual psychological compatibility.

2/2

GNOYEVAYA, N. K.

respiration physiology

SO: JPRS 53448
24 June 91

UDC 612.227.1

SOME ASPECTS OF THE HUMAN EXTERNAL RESPIRATION FUNCTION DURING WORK

[Article by A. S. Barer and N. K. Gnoyevaya, Respiration Physiology, Moscow, Kosmicheskaya Biologiya i Meditsina, Vol 5, No 2, 1971, pp 82-85, submitted for publication 1 June 1970]

Abstract: The relationship between respiration rate and volume and the minute volume of respiration was studied under a wide variety of physical loads, including extreme working conditions. Subjects wearing light coveralls or spacesuits worked on a bicycle-type ergometer and walked on a treadmill or along level hard ground. A well-expressed pattern of dynamic change in respiration rate and volume was observed, dependent on the intensity of the performed work. An increase in pulmonary ventilation is ensured during different parts of the work process by different combinations of reactions of respiratory act components: in some due to an increase in the respiration rate, and in others due to an increase in respiration volume. It is postulated that the basis for the described phenomena is a principle characteristic for all biological control systems; a minimizing of energy expenditures when the optimum effect is attained (in this case with respect to the minute volume of respiration).

Determination of the laws of functioning of the human external respiration system under a physical load is of fundamental importance for aviation medicine and primarily for developing individual life support systems for fliers and cosmonauts. Study of the functional changes in external respiration under a physical load of different intensity reveals a multiplicity of forms of integration in the activity of this complexly organized system (M. Marshak; S. P. Letunov, et al.; B. A. Katsnel'son and V. V. Rozenblat; L. L. Shik; N. V. Zimkin; V. S. Farfel' and V. V. Mikhaylov; Lamb, et al.; Bargeton, et al.).

USSR

UDC 613(470)(091)

SHITSKOVA, A. P., AKSYUK, A. F., BEYLIKHIS, G. A., GNOYEVAYA, V. L., GUSEV, M.I., ZHILIN, P. N., KOTKIN, Ye. L., PAL'TSEV, Yu. P., and YASTREBOV, G. G.

"Coping With Current Health Problems in the RSFSR"

Moscow, Gigiyena i Sanitariya, No 12, 1972, pp 8-16

Abstract: Health problems were a major concern of the communist leaders after the revolution who swiftly organized agencies and services to deal with epidemics and famines. As these were brought under control, health officials became involved in city planning, design and building of houses, etc. The increasing tempo of industrialization led the authorities by the 1930's to study atmospheric pollution and the disposal of municipal and industrial sewage. Water pollution and suitable use of water resources were major interests by the 1940's. Following the war, industrial hygiene and occupational diseases along with food poisonings became the center of attention. In the 1960's research was focused on the problems created by the chemicalization of agriculture, the use of pesticides in particular. The effects of exposure to ultrasound, radiation, microwaves, and other technological advances are now under study. Much stress is placed on preventive medicine, with frequent mass checkups of the population, particularly children and adolescents. The importance of

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SHITSKOVA, A. P., Gigiyena i Sanitariya, No 12, 1972, pp 8-16

comprehensive, accurate health statistics was recognized in the 1920's and they are constantly being refined and improved as an indispensable basis for planning and taking effective action.

USSR

UDC 537.581

GNUCHEV, N.M., KANCHEVA, I.R., KIRSANOVA, T.S.

"Effect Of Ion Bombardment On Thermoemission Properties Of An Alloy Of Palladium With Barium"

Elektron. tekhnika. Nauchno-tekhn.sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 12, pp 131-133 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A7)

Translation: The effect of bombardment by argon ions on the emission properties of an alloy of Pd plus 1.5-percent Ba was investigated in the temperature interval 900--1200° K with densities of ion current of 10^{-7}--10^{-5} a/cm^2 and energy of the ions of 2 kev. Ion bomardment leads to a decrease of the work function. On discontinuation of the bombardment the original emission properties of the alloy are restored. Author's abstract.

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USSR

UDC 669-157.96

VOSKRESENSKAYA, N. L., GNUCHEV, V. S., GUREVICH, M. YE., KRASIL'NIKOV, V. S., LARIKOV, L. N., RYBALKINA, L. V., and SINITSKIY, N. YE., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Physical Nature of the Processes of formation of Complex Mechanical Properties During the Tempering of a Hardened Alloyed Structural Steel"

Kiev, Metallofizika, No 40, 1972, pp 53-56

Abstract: Calorimetric, x-ray, volumetric, and mechanical tests were used to study the physical processes which take place in the tempering of a complexly alloyed structural steel (approximately 0.33% C, 3% Cr, 1% Mo, Ni, W, and V). The magnitudes of thermal and volume effects were determined in the tempering stages. The types of processes occurring and their effect on the formation of mechanical properties were analyzed. It was established that the optimum combination of strength and ductile properties, obtained as a result of tempering the investigated steel for an empirically selected mode, was associated with the occurrence of processes of internal stress relaxation, primarily at points of their maximum concentration. The hypothesis was made that this phenomenon is related to the development of processes of diffusion "closing" microcracks which cause brittle failure of the material. 3 figures, 6 bibliographic references.

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Acc. Nr: AP0036811 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 26-30

CULTIVATION OF SALMONELLAE OF TYPHOID FEVER ON SYNTHETIC NUTRIENT MEDIUM

I. M. Gruber, V. V. Biryukov, K. D. Gnuni, F. I. Aptekareva

The authors modified the full value amino acid medium by replacement of triptophane with its precursor — indol (0.1 g/l), and of asparagic acid — with urea (0.86 g/l). By the indices of reproduction the modified nutrient medium was not inferiour to the initial, but was even somewhat superior to it by growth indices. Replacement of the two deficient expensive amino acids offered a possibility of cutting in two the cost of the nutrient medium.

A method of orthogonal Latin rectangles was used in this work; it offered a possibility of establishing the range of changes in the concentration of components, capable of providing the optimal rate of reproduction of typhoid bacilli, by a small number of experiments.

USSR

UDC 541.133:541.183.12

GREBENYUK, V. D., LYUBMAN, N. Ya., GNUSIN, N. P., Institute Physical and Chemical Bases of Processing Raw Materials, Novosibirsk, Siberian Department, Academy of Sciences USSR

"Investigation of Electrical Conductivity in Connection with Heterogeneity of Ion-Exchange Materials"

Novosibirsk, Izvestiya Sib Otdel Akad Nauk SSSR, Seriya Khim Nauk, No. 2, Vol. 1, pp. 9-11

Abstract: In spite of the importance of homogeneity in ionites, there are no simple, rapid methods for determining homogeneity. This work is a direct experimental test of an earlier statement that with decreased concentration of a dilute equilibrium solution, heterogeneity of ionite material should lead to a sharp drop in electrical conductivity. Ionites with various degrees of homogeneity, created either in synthesis or by subsequent treatment, were used in the work. An increase of heterogeneity of ionites in the area of dilute equilibrium solutions leads to an increase in the slope of the curve of electrical conductivity of the ionite as a function of concentration of the equilibrium solution. This effect can be used for comparative evaluation of the degree of heterogeneity of the ionites.

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1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EQUIVALENT THREE ELEMENT ELECTRIC CIRCUIT FOR THE ELECTRODE SOLUTION INTERFACE -U-

AUTHOR--GNUSIN, N.P., NOVITSKIY, S.P.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 299-306

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--MATHEMATIC MODEL, ELECTRIC CURRENT, ELECTRONIC CIRCUIT, ELECTRODE, ELECTRIC IMPEDANCE, ELECTRIC CAPACITANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0247 STEP NO--UR/0364/70/006/003/0299/0306

CIRC ACCESSION NO--AP0105321

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105321

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MATH. MODEL OF THE ELECTRODE SOLN. INTERFACE IS COMPUTED BY ANAL. OF THE FREQUENCY DEPENDENCE OF THE PHASE LAG OF THE INTERFACE. THE MODEL COMPRISES A RESISTANCE, A CAPACITANCE, AND A WARBURG IMPEDANCE.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ELECTROCHEMICAL REGENERATION OF ION EXCHANGE COLUMNS DURING TRANSVERSE CIRCULATION OF AN EQUILIBRIUM SOLUTION -U-
AUTHOR--GREBENYUK, V.D., GNUSIN, N.P., BARMASHENKO, I.B., MAZANKO, A.F.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1) 139-42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, ELECTROCHEMISTRY, ION, CHEMICAL EQUILIBRIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0319 STEP NO--UR/0364/70/006/001/0139/0142

CIRC ACCESSION NO--AP0103974
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103974

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REGENERATION OF ION EXCHANGERS IS EXPRESSED BY AN EQUATION THAT RELATES THE AMT. OF IONS REPLACED WITHIN A CERTAIN TIME TO THE MOBILITY OF THE ION, THE ION CONTENT IN THE ION EXCHANGER, AND THE CURRENT. THE EXPTL. RESULTS AGREE WELL WITH THE EQUATION.

UNCLASSIFIED 0123

Acc. Nr. AP0053747 Abstracting Service: CHEMICAL ABST. 6/20 Ref. Code UR0076

115686g Calculating the electrical conductivity of ion-exchange columns with a mixed layer of ion exchangers. Grebenyuk, V. D.; Gnusin, N. P.; Makarova, V. A. (Inst. Obshch. Neorg. Khim., Kiev, USSR). *Zh. Fiz. Khim.* 1970, 44(1), 132–6 (Russ). Two methods for calcg. the elec. cond. of ion-exchange columns with a mixed layer of ion exchangers are suggested and exptl. verified. The 1st method is based on the neutralization of the elec. cond. of the ion-exchange columns with individual ion exchangers, while the 2nd is based on the neutralization of the elec. cond. of the individual ion exchangers sepd. from the equil. soln. The applicability and the region of mutual consistency of these methods are discussed. M. Braunovic

REEL/FRAME
19830808

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USSR

UDC 543.25:546.21

GNUSKIN, YU. A., Laboratory of the Physiology and Biochemistry of Algae, Moscow State University imeni M. V. Lomonosov

"Electrochemical Determination of Oxygen Concentration in an Extensive Algal Culture"

Moscow, Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 1, 1970, pp 119-122

Abstract: A device for continuous recording of changes in oxygen concentration by polarography in various media is described. It was used to measure the rates of oxygen consumption in Anacystis nidulans cultures grown on media with different sugars. The time required for a culture to reduce the oxygen concentration by half was 78.5 min on a mineral medium, 71.0 min on a medium with glucose, 60.0 min on a medium with maltose, and 54.5 min on a medium with xylose.

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1/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELECTROCHEMICAL DETERMINATION OF OXYGEN CONCENTRATION IN AN EXTENSIVE ALGAE CULTURE -U-
AUTHOR--GNUSKIN, YU.A.

COUNTRY OF INFO--USSR

SOURCE--BIOL. NAUKI 1970, (1), 119-22

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALGAE, CONTINUOUS CULTURE, OXYGEN, POLAROGRAPHIC ANALYSIS, CULTURE MEDIUM, CARBOHYDRATE, OXYGEN METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0619 STEP NO--UR/0325/70/000/001/0119/0122

CIRC ACCESSION NO--AP0117845
UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117845

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THERMOSTATED CELL WITH A NEEDLE PT ELECTRODE WAS DESIGNED FOR THE POLAROGRAPHIC DETN. OF O CONCN. IN EXTENSIVE CULTURES OF ALGAE. THE CELL WAS USED FOR THE MEASUREMENT OF THE RATE OF O CONSUMPTION IN THE DARKNESS BY THE CULTURES OF ANACYSTIS NIDULANS CULTIVATED IN THE MEDIUM OF KRATZ-MYERS IN THE PRESENCE OF 100 MG OF GLUCOSE (I), MALTOSE (II), OR XYLOSE (III). THE RATE OF O CONSUMPTION BY 1 CELL PER 1 HR WAS 0.78 TIMES 10 PRIME NEGATIVE6, 0.88 TIMES 10 PRIME NEGATIVE6, 0.90 TIMES 10 PRIME NEGATIVE6, AND 1.53 TIMES 10 PRIME NEGATIVE6 MG-L. IN THE CONTROL MINERAL MEDIUM AND IN THE PRESENCE OF I, II, AND III, RESP. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 612.741

MART'YANOV, V. A., KOPYLOV, YU. A., GNUTOV, M. I., Physiology Department, Laboratory of Programmed Sports Training and Physiology of Fitness for Work, State Central Order of Lenin Institute of Physical Culture, Moscow

"Degree of Utilization of the Possibilities of the Muscular System With Maximum Voluntary Effort"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,390-1,396

Abstract: A study was made of the degree of utilizing the possibilities of the muscular system with maximuj voluntary effort. The force of a maximum voluntary contraction of the muscles participating in moving the first finger and that cuased by electric stimulation of the isometric contractions were compared. The force of a voluntary contraction of the m. adductor pollicis was below the force of an evoked contraction in 50% of the cases, but it was an average of 94.1±5.7% of the latter. On moving the first finger with the participation of several muscles (m. adductor pollicis and m. flexor pollicis longus), the force of the voluntary contraction was in all experiments appreciably below the force of an evoked contraction, and it was an average of 84.9±7.2% of the latter. Special instruction combined with

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